14 November 02

Distribution List

CID BOREALIS
VOLUME 1 OPERATIONAL ANALYSIS
VOLUME 2 TECHNICAL REPORT

References: A. CID Borealis Final Report Writing Guide dated 14 June 02
B. Concept Paper dated 12 July 2001

INTRODUCTION

1. In accordance with Ref A, attached are Volume 1: Operational Analysis and Volume 2: Technical Report for CID Borealis 2002. Volume 3: After Action Report was previously released under a separate cover. The intent of these reports is to record observations (with recommended solutions), and to assist national efforts to improve ABCA CIS interoperability in the conduct of future coalition operations.

CID BOREALIS BACKGROUND

2. CID Borealis 02 was conducted at Canadian Forces Base Kingston, Ontario, Canada from 9 - 22 June 2002. The aim of CID Borealis 02 was to test CIS interoperability among the participants in order to prepare and enable those nations conduct coalition tactical operations.

3. The objectives of CID Borealis 02 established at Ref B were;

a. Planning. To identify planning, operational, technical and support procedures to achieve CIS interoperability;

b. Coalition Tactical Network.

(1) To establish and test a voice and data network that would confirm distinct C and IS interoperability; and

(2) To establish the capability of data and voice networks via various means (including a variety of transmission systems and network configurations).

c. Testing;

(1) To confirm communications connectivity and CIS interoperability;

(2) To test the capability of data and voice networks via various means; and

(3) To test the stability of communications connectivity;

d. Analysis;

(1) To document the level of interoperability achieved to date;

(2) To produce a list of achieved and non-achieved interoperability areas to guide future CIS planning;

(3) To document areas for required future work; and

(4) Prepare a list of QSTAGs to be validated.

PARTICIPATION

4. CID Borealis 02 involved representation from the armies of all five ABCA(NZ) nations, with over 400 military and civilian personnel conducting either testing or host nation support. Approximately 200 visitors toured the site during the demonstration.

SIGNIFICANT POINTS - VOLUME 1 OPERATIONAL ANALYSIS

5. The following points warrant elaboration within this covering letter:

a. As has arguably been the case for at least the last decade, CID BOREALIS 2002 demonstrated that the Coalition still has adequate interoperability to exercise authority and direction over assigned or attached forces via radio (both VHF and HF). This baseline capability demonstrates that the Coalition would be able to coordinate and synchronize manoeuvre units and staff activities, and assess the current situation at a basic level;

b. As the Coalition moves toward a more digital based force, and interoperability issues are solved, the quality and quantity of perishable information should improve; thereby, improving the CIS and the ability to exercise command and control to a higher standard. A balance of technological and liaison solutions are needed to ensure that an ABCA Coalition command and control system has redundant means to maintain SA across the coalition. The dependence on digital devices will increase as reliability improves, which also increases the risk that nations will not have analogue systems to fall back on in the event of a digital failure, Cyber, or Electronic Warfare (EW) attack.

c. CID BOREALIS 2002 demonstrated the need to standardize equipment specifications, as well as, procedures and doctrine to address both the process and methods for providing accurate, timely, and relevant information distribution between coalition partners. While Nations can send formal military messages within their own tactical CIS architecture, incompatibility between national applications hinders timely distribution of information, and decreases the ability to achieve timely SA. The severity of this problem is dependant upon the level of command and the operational tempo. Workarounds, software, or emerging technologies may facilitate interoperability of these systems in the future. However, establishing minimal technical interoperability between systems does not guarantee the full capability of feature sets, which certain staffs may require to conduct MDMP. As a result, the flexibility of commanders to execute command and control may be limited, depending on the architecture and the nations involved.

d. The continued documentation of the standard and non-standard (work-arounds) test strings used at CID BOREALIS 2002 will enable the coalition to develop and maintain configuration management and engineering standards. These documented

standards permit the replicating of similar activities in the future, and as well, serve as a means to measure continuous improvement. They will also serve to assist in the planning and conduct of future coalition operations between ABCA (NZ) nations.

e. Emerging technologies are likely to change the nature of coalition operations and will require the use of contractors on the battlefield, greater need for information management, information filters, and real-time lateral collaborative planning. Technological advances in the areas of MGI/GIS data, wireless communications, software gateways to connect C2IS COTS with national battle-command systems, and the proliferation of COTS products to the lower echelon units are the emerging technologies most likely to impact future coalition operations.

RESULTANT RECOMMENDATIONS (VOLUME 1)

6. It is recommended that the ABCA Program place emphasis on the following:

a. Interoperability/Future Standards Development;

b. Future initiatives relating to operational, and technical interoperability;

c. Ensuring a level of "interoperability of the mind" is maintained and developed such that the Armies are able to predict how each partner will react to the same piece of information;

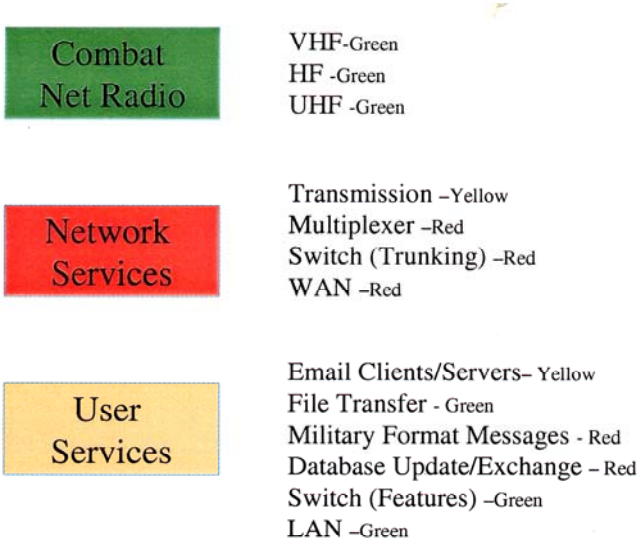
d. Developing common levels of interoperability in parallel with development of common standards;

e. Accommodating both current and future technologies in standardization initiatives; and

f. The formulation of a "Way Ahead" for CIS Interoperability in the ABCA Program, as outlined in Volume 1 Operational Analysis.

GREEN	Interoperable: Achieved full functionality with no configuration changes.
YELLOW	Interoperable, but with limitations: Achieved partial functionality or required a configuration change to achieve at least minimum functionality
RED	Not Interoperable
BLUE	Not Possible - deemed not interoperable based on technical specifications
Black	Not Tested - Scheduled but not tested

7. The interoperability results of CID Borealis can be summarised as Combat Net Radio (Green/good), Network Services (Red/Very bad) and User Services (Yellow/bad). A more detailed accounting indicates that Combat Net Radio (CNR) was green for test results associated with VHF, HF and UHF voice. Network Services were considered yellow for transmission, red for multiplexer, red for digital switch trunking and red for wide area network connectivity. User Services were yellow for commercial email, green for file transfer, red for military format messages, red for database update/exchange, green for voice switch features and green for commercial local area network.



8. The attached report (Vol 2) examines in more detail the interoperability results, including aspects of technology, unit level skills, operational planning and general readiness issues.

9. As a result of CID Borealis the ABCA Interoperability Engineering group (SWP/IE) will be addressing future work items for the US 2004 Exercise. It is intended to prioritise and close the capability gap on some of the more critical and common interoperability problems, specifically with respect to IP addressing, switches and multiplexing.

10. In addition every ABCA (NZ) member nation is encouraged to focus resources on bilateral interoperability problems, to further assist in closing specific capability gaps.

CONCLUSIONS

11. CID Borealis was a major success. It was the first time that the ABCA (NZ) armies actually conducted an interoperability demonstration to validate communication information systems interoperability. The results were conclusive. We have major issues that need to be addressed as individual national and as a Coalition, if we plan to support our soldiers in future operations.

G.W. Nordick
Brigadier General
Director, CID Borealis 02

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